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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/534,799 | 11/21/2005 | Yoshikazu Yoshida | 0234-0487PUS1 | 8682 |

2292 7590 05/16/2007
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| EXAMINER |
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SINES, BRIAN J

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| ART UNIT | PAPER NUMBER |
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1743

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| NOTIFICATION DATE | DELIVERY MODE |
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05/16/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

| | | | |
|------------------------------|-------------------------------|------------------------------------|--|
| Office Action Summary | Application No. 10/534,799 | Applicant(s) YOSHIDA, YOSHIKAZU | |
| | Examiner Brian J. Sines | Art Unit 1743 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
 4a) Of the above claim(s) 1 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of group II comprising claims 2 – 4 in the reply filed on 2/26/2007 is acknowledged.
2. Claim 1 is withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

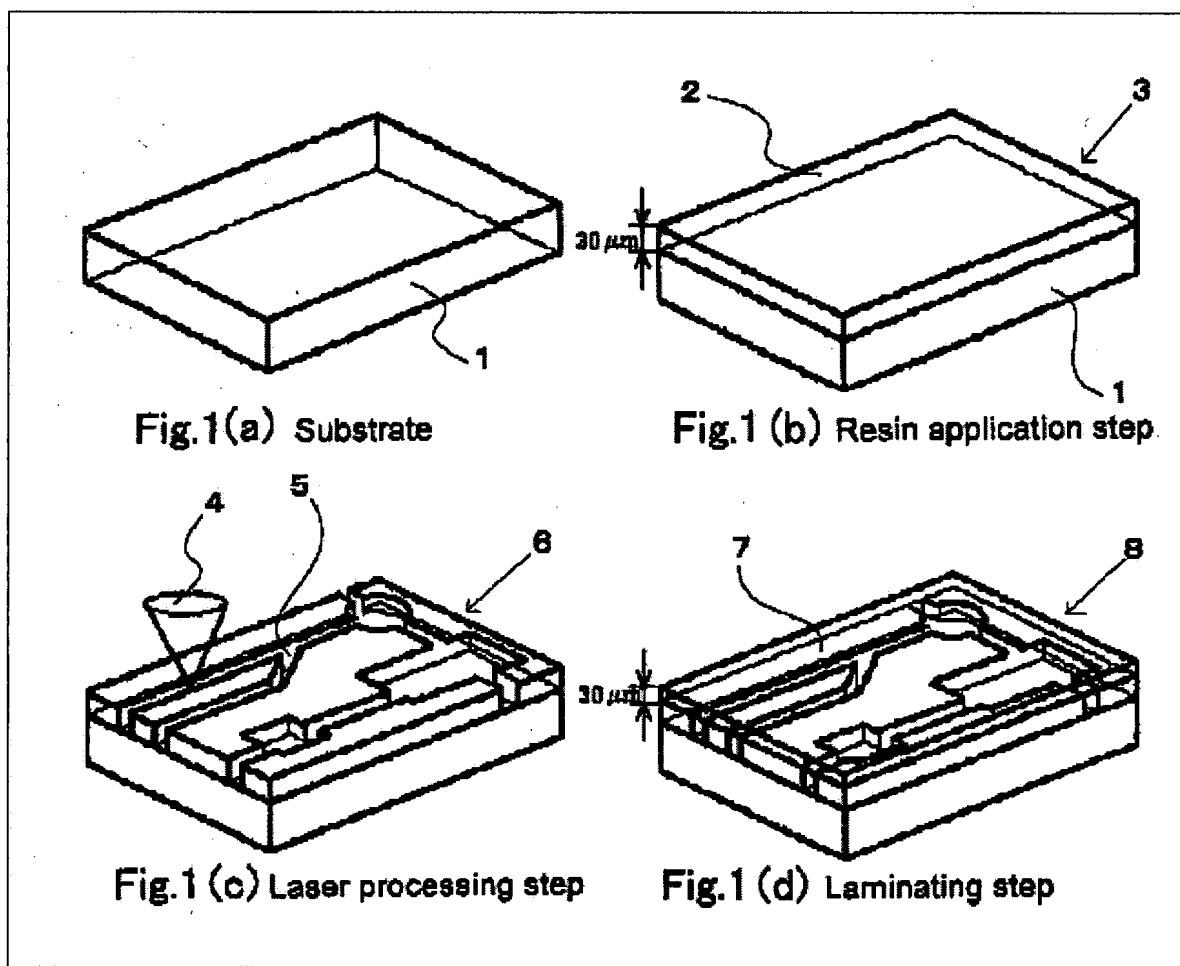
The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 2 – 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida (U.S. Pat. Appl. No. 2003/0232450 A1) ("Yoshida") in view of Takanori et al. (JP 2002 – 086399) ("Takanori").

Regarding claim 2, Yoshida teaches a method for manufacturing a microfluidic device comprising the steps of: forming a resin layer 2 on a substrate 1, and forming a groove or

channel 5 by removing a portion of the resin layer by laser processing; and forming via laser processing a throughhole or inlet for introducing a sample to the groove or channel (see, e.g., paragraphs 28; figures 1a – 1d).



Yoshida does not specifically teach the formation of subsequent resin layers to form a three-dimensional fluidic circuit.

Takanori does teach a method of manufacturing a microfluidic device incorporating a plurality of stacked resin layers comprising various capillary cavities or microchannels that communicate with each other through the respective layers (see Abstract).

Furthermore, the mere duplication of parts, i.e., the plurality of resin layers in this case for the disclosed device, without any new or unexpected results, is within the ambit of one of ordinary skill in the art (see MPEP § 2144.04).

Takanori indicates that the stack resin layers provides for a device having a variety of functional components, such as a flow passage, a reaction vessel, and various valve structures for processing samples that can increase the functional ability of the microfluidic device and thereby offer further benefits in device utility (see Abstract).

Yoshida indicates that a resin coat can be formed via lamination on the initial processed resin layer (see, e.g., Abstract). Consequently, a person of ordinary skill in the art would accordingly have had a reasonable expectation for success of forming a layered structure comprising a plurality of resin layers for the microfluidic device.

Therefore, it would have been obvious to a person of ordinary skill in the art to incorporate the additional steps of forming subsequent resin layers having additional groove or channel structures to form a three-dimensional fluid channel circuit structure as claimed to provide for the added functional utility of the disclosed microfluidic device.

Regarding claim 3, Yoshida teaches the use of lamination methods for device manufacture (see paragraph 29).

Regarding claim 4, Yoshida teaches the use of spin coating methods for device manufacture (see paragraph 31).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The additional cite prior art teach the manufacture of multi-layered microfluidic devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian J. Sines whose telephone number is (571) 272-1263. The examiner can normally be reached on Monday - Friday (11 AM - 8 PM EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill A. Warden can be reached on (571) 272-1267. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Brian J. Sines
Primary Examiner
Art Unit 1743

